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EXAMINER	
BLANTON, JOHN D	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/671,084	FINN, NORMAN W.	
	Examiner	Art Unit	
	JOHN BLANTON	2466	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Examiner has provided new art to better read on the amended claims as Examiner has interpreted the claim limitations. To further prosecution, provided below is an explanation of the Examiner's interpretation and reasons for rejecting the amended claims. 802.1Q teaches the use of a VLAN encoded attribute message (Section 11.2.3.1.2-3); 802.1D teaches the combination of multiple VLAN attribute fields into a single distribution message i.e. GARP PDU (Section 12.11.1.2), figure 12-6 expressly shows multiple VLAN attributes (N) in a single GARP PDU; and Schmid teaches a method of taking a payload and compressing the information into a smaller payload i.e. separate field (paragraph 23). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q and encoding the payload i.e. the multiple attributes into an encoded value and place this compressed payload in a separate field i.e. the newly formed payload as described by Schmid. Since claim 1 does not distinguish how the new encoded value is placed in the PDU or whether the new encoded value replaces the standard two octet field of a single VLAN attribute, the Examiner asserts that any payload compression in combination with the

802.1Q and 802.1D standards reads on the limitation of encoding the VLAN ID's in a GVRP PDU and placing this encoded value in a field.

In view of the above discussions the rejection of claims 1-29 still stands.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Examiner has not rejected claim 1 for software per se, even though claim 1 discloses encoder/decoder units. For the record, Examiner interprets the claimed invention to disclose hardware because the specification discloses network devices as comprising computers with cpu's (pages 9-10). Thus Examiner contends that the broadest reasonable interpretation of the encoder/decoder units in light of the specification would comprise of computers with processors performing the encoding/decoding.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-4, 14, 15, 19, and 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks (IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks, IEEE std. 802.1Q, 1998) (referenced as 802.1Q below in the office action) in view of IEEE Standard Part 3: Media Access Control (MAC) Bridges, IEEE std. 801.1D, 1998)(referenced as 802.1D below in the office action), Schmid et al. (US 2005/0047570) (Schmid hereinafter), and Huang (US 4,281,391).

For claims 1, 14, 22, 23, and 24; 802.1Q discloses: an intermediate network device having a plurality of ports for sending and receiving network messages to and from one or more entities of a computer network at least some of which are segregated into a plurality of virtual local area network (VLANs) defined within the computer network (Figure 11-1: ***illustrates the architecture of GVRP in the case of a two-Port Bridge and an end station***)(Section 11.2.1.1: ***VLAN-aware bridges and end devices use the GVRP with sets of VLANs they are members of***), the intermediate network device comprising: a Generic

Application Registration Protocol (GARP) VLAN Registration Protocol (GVRP) application component associated with a selected port (Section 11.2: ***The GARP VLAN Registration Protocol (GVRP) defines a GARP Application that provides the VLAN registration service***), the GVRP application component having: a GARP Information Declaration (GID) component configured to maintain VLAN registration state for the selected port in response to receiving attribute events for the VLANs (Section 11.2.3.1.3: ***GVRP makes use of GARP Information Declaration (GID) and GARP Information Propagation (GIP), which provide the common state machine descriptions and the common information propagation mechanisms defined for use in GARP-based applications. The GARP architecture, GID, and GIP are defined in ISO/IEC 15802-3, Clause 12. GVRP provides a mechanism for dynamic maintenance of the contents of Dynamic VLAN Registration Entries for each VLAN, and for propagating the information they contain to other Bridges. This information allows GVRP-aware devices to dynamically establish and update their knowledge of the set of VLANs that currently have active members, and through which Ports those members can be reached***); a GVRP encoder/decoder unit (Section 11.2.3.1.2-3: ***attributes and values are encoded***); and a GVRP PDU message generator, the attribute events associated with a given set of VLANs (Section 11.2.3.1.2-3: ***Values of instances of the VID Attribute Type shall be encoded as Attribute Values in GARP PDUs***); transmitting the VLAN registration protocol message including the values encompassing all of the VLANs defined within the computer network from the intermediate network device to one or more other network devices within the computer network (Section 11.2.1.2: ***devices in the network such as bridges register and propagate VLAN memberships on all bridge ports that are part of the active topology***).

802.1Q do not disclose, but 802.1D from same fields of endeavor teach: the GVRP PDU message generator loads the encoded values computed for all of the VLANs defined within the computer network within a single GVRP PDU message for transmission from the selected port (Section 12.11.1.2: ***Figure 12-6 shows the resulting GARP PDU structure with multiple Attributes***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the GARP structure described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to improve inter-operability by using industry established protocols.

802.1D and 802.1Q do not expressly disclose the encoding of VLAN attributes, but 802.1D does teach the transmission of multiple messages containing attributes in a single GARP PDU (Section 12.11.1.2: ***Figure 12-6 shows the resulting GARP PDU structure with multiple Attributes***), and 802.1Q does teach the generation of messages according to the GARP protocol that comprise attribute information for a plurality of different VLANs (Section 11.3.2: ***Such end stations require only the ability to register membership of one or more VLANs, and revoke that membership at some later point in time***). Schmid from same fields of endeavor teaches: compact information through an encoded value of a plurality of frames, in accordance with an encoding algorithm (Paragraph 23: ***the payload of a packet can be compressed to provide secure communications***); loads each encoded value into a separate field within a single message, wherein the encoded values computed for the payload (Paragraph 23: ***the payload of a packet can be compressed to provide secure communications***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the compression of payload data into a

smaller field as described by Schmid in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages by utilizing compression methods well known in the art.

802.1Q, 802.1D, and Schmid do not disclose, but Huang from same fields of endeavor teaches: the encoding algorithm is a number based conversion algorithm (Column 34, Lines 59-64: ***dividing this by the same number to form a new equation is known as Euclid's base conversion algorithm***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement an encoding calculation as described by Huang in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

For claim 2, 802.1Q, 802.1D, and Schmid disclose the subject matter in claim 1 as described above in the office action.

802.1Q, 802.1D, and Schmid do not disclose, but Huang from same fields of endeavor teaches: the number base conversion encoding algorithm is a base number based conversion encoding algorithm (Column 34, Lines 59-64: ***dividing this by the same number to form a new equation is known as Euclid's base conversion algorithm***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement an encoding calculation as described by Huang in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

Huang discloses using the base conversion algorithm, but does not explicitly disclose using the base-5 to base-2 number based conversion. However, the base

conversion algorithm is generating a pointer to the entries of the Attribute Event Codes, and there are 5 entries in the table (Refer to Applicant's Figure 6). Therefore, the optimum base value required to point to all entries is 5. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement an encoding calculation as described by Huang using a base value of 5. The motivation is to distinctly reference all values in the Attribute table with smallest possible hashing value.

For claim 3, 802.1Q, 802.1D, Schmid, and Huang disclose the subject matter in claim 2 as described above in the office action.

Huang discloses using the base conversion algorithm, but does not explicitly disclose using the algorithm with a base of 5. However, the base conversion algorithm is generating a pointer to the entries of the Attribute Event Codes, and there are 5 entries in the table (Refer to Applicant's Figure 6). Therefore, the optimum base value required to point to all entries is 5. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement an encoding calculation as described by Huang using a base value of 5. The motivation is to distinctly reference all values in the Attribute table with smallest possible hashing value.

For claims 4 and 15, 802.1Q and Schmid disclose the subject matter in claims 1 and 14 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but 802.1D from same fields of endeavor teach: to yield attribute event information for a set of VLANs (Section 12.3.2.2: ***the GID determines the attribute value based on the encoded value contained in the***

GARP PDU's for each port). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the port description updating method described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to improve inter-operability by using industry established protocols.

For claim 19, 802.1Q, Schmid, and 802.1D disclose the subject matter in claim 14 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but 802.1D from same fields of endeavor teach: a port partner variable configured to hold a source identifier (Section 12.2: ***The set of registrations of a given Attribute value within the Bridged LAN can therefore be considered to form a set of subtrees)***, wherein upon processing a received GVRP message containing a negotiation message with a source identifier the compact GVRP application component places the source identifier in the port partner variable (Section 12.2: ***each indicating, from a given GARP Participant, the subset of the active topology in which all GARP Participants that have declared that Attribute value can be found. In Figure 12-3, Ports that form this set of subtrees are shown as the origin of the arrows, based on the registrations that are shown in Figure 12-2.***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to use standard protocols for registering of attributes.

For claims 25, 27, and 28, 802.1Q, Schmid, and 802.1D disclose the subject matter in claims 24, 1, and 14 as described above in the office action.

802.1Q, Schmid, and 802.1D do not disclose expressly the number of VLAN's in the network include at least 373 VLAN's, but 802.1Q teaches the use of a VLAN

encoded attribute message (Section 11.2.3.1.2-3); 802.1D teaches the combination of multiple VLAN attribute fields into a single distribution message i.e. GARP PDU (Section 12.11.1.2); and Schmid teaches a method of taking multiple frames and compressing the information to be encapsulated into a single frame (paragraph 35). Huang from similar fields of endeavor teaches a compression algorithm that can account for 373 VLAN's in a single message (Column 34, Lines 59-64: ***dividing this by the same number to form a new equation is known as Euclid's base conversion algorithm; Examiner asserts that the Euclid base conversion is capable of 373 VLAN attributes because Applicant's specification teaches the use of this algorithm to enable the claimed invention***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q using one frame through compression and encapsulation as described by Schmid using an algorithm capable of 373 VLAN attributes in a single frame. The motivation is to reduce network overhead.

For claim 26, 802.1Q, Schmid, and 802.1D disclose the subject matter in claim 24 as described above in the office action.

802.1Q, Schmid, and 802.1D do not disclose expressly the number of VLAN's in the network include at least 4094 VLAN's, but 802.1Q teaches the use of a VLAN encoded attribute message (Section 11.2.3.1.2-3); 802.1D teaches the combination of multiple VLAN attribute fields into a single distribution message i.e. GARP PDU (Section 12.11.1.2); and Schmid teaches a method of taking multiple frames and compressing the information to be encapsulated into a single frame (paragraph 35). Huang from similar fields of endeavor teaches a compression algorithm that can account for 4094

VLAN's in a single message (Column 34, Lines 59-64: ***dividing this by the same number to form a new equation is known as Euclid's base conversion algorithm; Examiner asserts that the Euclid base conversion is capable of 4094 VLAN attributes because Applicant's specification teaches the use of this algorithm to enable the claimed invention***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q using one frame through compression and encapsulation as described by Schmid using an algorithm capable of 4094 VLAN attributes in a single frame. The motivation is to reduce network overhead.

For claim 29, 802.1Q, 802.1D, and Schmid disclose the subject matter in claim 24 as described above in the office action. 802.1Q discloses: each VLAN that are represented in a first base (Section 11.2.3.1.3: ***VLAN ID's are represented by an unsigned binary number i.e. base 2***).

802.1Q, 802.1D, and Schmid do not disclose, but Huang from same fields of endeavor teaches: the encoding algorithm is a number base conversion encoding algorithm, and converts the attribute events into a single encoded value that is represented in a second, different base (Column 34, Lines 59-64: ***dividing this by the same number to form a new equation is known as Euclid's base conversion algorithm***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement an encoding calculation as described by Huang in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

802.1D and 802.1Q do not expressly disclose compresses values of attribute events associated with PDU, but 802.1D does teach the transmission of multiple messages containing attributes in a single GARP PDU (Section 12.11.1.2: ***Figure 12-6 shows the resulting GARP PDU structure with multiple Attributes***), and 802.1Q does teach the generation of messages according to the GARP protocol that comprise attribute information for a plurality of different VLANs (Section 11.3.2: ***Such end stations require only the ability to register membership of one or more VLANs, and revoke that membership at some later point in time***). Schmid from same fields of endeavor teaches: compresses values of the payload information (Paragraph 23: ***the payload of a packet can be compressed to provide secure communications***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the compression of payload data into a smaller field as described by Schmid in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages by utilizing compression methods well known in the art.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over 802.1Q, 801.1D, Schmid, and Huang as applied to claim 1 above, and further in view of Churchyard et al. (US 7,089,302) (hereinafter Churchyard).

For claim 5, 802.1Q, 802.1D, and Schmid disclose the subject matter in claim 1 as described above in the office action.

802.1Q, 802.1D, and Schmid do not disclose, but Churchyard from same fields of endeavor teach: generate and send a GVRP PDU containing a just_kidding message (Column 4, Lines 65-67: ***nodes not capable of decoding the message will read the header field***

and not recognize the field entry; this will cause the message to be ignored; this is the intent of the just kidding message, so nodes that don't understand the compact GVRP format will not get corrupted – *Note the claim language does not clearly define what a just_kidding message's function is, therefore the interpretation of the just_kidding message reads on any message generated in a GVRP PDU*). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a non-standard field value as described by Churchyard in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

6. Claims 6-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over 802.1Q, 801.1D, Schmid, Huang, and Churchyard as applied to claim 5 above, and further in view of Rodeheffer et al. (US 2005/0036500) (hereinafter Rodeheffer).

For claim 6, 802.1Q, 802.1D, Schmid, and Churchyard disclose the subject matter in claim 5 as described above in the office action.

802.1Q do not disclose, but 802.1D from same fields of endeavor teach: a leave timer (Section 12.7.4: ***each registrar per attribute comprises a leave timer***); state machines associated with each GID (Section 12.3.2: ***each instance of GID consists of a set of state machines for each attribute value associated with the GARP***); state machine starts the leave timer (Section 12.7.4: ***the registrar starts the leave timer***) while the leave all timer is restarted (Section 12.7.6: ***when the another participant receives a leave all message the participant generates a restart timer message***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP

protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

802.1D does not disclose the additional message “just kidding” which causes non-compliant nodes to ignore the compact GVRP message disclosed in claim 1, but Churchyard does disclose using an additional field that non-compliant nodes would ignore which reads on a “just kidding” message. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement state machines and timers as described by 802.1D as applied to the additional “just kidding" message described by Churchyard. The motivation is to use the 802.1D standard to any variable or state machines added to the existing protocol.

802.1D does not disclose the additional message “just kidding” which causes non-compliant nodes to ignore the compact GVRP message disclosed in claim 1, but Churchyard does disclose using an additional field that non-compliant nodes would ignore which reads on a “just kidding” message. Rodeheffer from similar fields of endeavor teaches: initiating a plurality of timers where the one time is started to confirm the response from other devices (Paragraph 121, Lines 1-8: ***This timer is started in step 624 when the entry associated with a slave is added to the inventory. The timer is restarted (refreshed) in step 626 each time the slave confirms its acceptance. If a slave fails to confirm its acceptance, eventually the slave's entry timer expires. When an entry timer expires, step 630, the entry associated with the slave is removed from the inventory -*** *Note the claim language does not clearly define what a just_kidding message’s function is or how the timers functions relative to the messages therefore the interpretation of the timers read on any plurality of timers*). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to

implement the watchdog timer after sending of the just kidding message for determining node acceptance. The motivation is to prevent the sending node from locking up due non-responsive nodes.

For claim 7, 802.1Q, Schmid, 802.1D, and Churchyard disclose the subject matter in claim 6 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but 802.1D from same fields of endeavor teach: a leave_all timer; and a leave_all state machine, wherein upon expiration of the leave_all timer the leave_all state machine enters an active state (Section 12.7.6: ***leave all messages are generated by the leave all state machine***) and the compact-GVRP application component generates and sends a GVRP PDU message that is configured to cause network entities that receive it to respond with one or more GVRP PDU messages (Section 12.7.6: ***when the leave all timer expires, a leave all message is generated; this requires all applicants to respond with a rejoin***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

For claim 8, 802.1Q, Schmid, 802.1D, and Churchyard disclose the subject matter in claim 7 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but 802.1D from same fields of endeavor teach: the leave timer (Section 12.7.4: ***each registrar per attribute comprises a leave timer***); leave_all timer (Section 12.7.6: ***when the leave all timer expires, a leave all message is generated; this requires all applicants to respond with a rejoin***). Thus it would have

been obvious to the person of ordinary skill in the art at the time of the invention to assign timer preset values so the participant will not time out when responding to a leave all message with a join message as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

802.1D does not disclose the additional message "just kidding" which causes non-compliant nodes to ignore the compact GVRP message disclosed in claim 1, but Churchyard does disclose using an additional field that non-compliant nodes would ignore which reads on a "just kidding" message. Rodeheffer from similar fields of endeavor teaches: initiating a plurality of timers where the one time is started to confirm the response from other devices (Paragraph 121, Lines 1-8: ***This timer is started in step 624 when the entry associated with a slave is added to the inventory. The timer is restarted (refreshed) in step 626 each time the slave confirms its acceptance. If a slave fails to confirm its acceptance, eventually the slave's entry timer expires. When an entry timer expires, step 630, the entry associated with the slave is removed from the inventory***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the watchdog timer after sending of the just kidding message for determining node acceptance. The motivation is to prevent the sending node from locking up due non-responsive nodes.

For claim 10, 802.1Q, Schmid, 802.1D, and Churchyard disclose the subject matter in claim 7 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but 802.1D from same fields of endeavor teach: a port partner variable configured to hold a source identifier (Section

12.2: ***The set of registrations of a given Attribute value within the Bridged LAN can therefore be considered to form a set of subtrees)***, wherein upon processing a received GVRP message containing a negotiation message with a source identifier the compact GVRP application component places the source identifier in the port partner variable (Section 12.2: ***each indicating, from a given GARP Participant, the subset of the active topology in which all GARP Participants that have declared that Attribute value can be found. In Figure 12-3, Ports that form this set of subtrees are shown as the origin of the arrows, based on the registrations that are shown in Figure 12-2.***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to use standard protocols for registering of attributes.

7. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over 802.1Q, 801.1D, Schmid, Huang, Churchyard, and Rodeheffer as applied to claims 7 and 16 above, and further in view of Liu (US 2004/0061773) and Uchida et al. (US 2004/0076130) (hereinafter Uchida).

For claims 9 and 18, 802.1Q, Schmid, 802.1D, and Churchyard disclose the subject matter in claims 7 and 16 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but Liu from same fields of endeavor teaches: a multi mode operation and the automatic transfer from one mode to another based on the received signal (Paragraph 38: ***the two modes, digital and analog, read on the slow and fast modes; further the device has a function to automatically switch between the modes, this reads on the mode select unit switching from compact to normal GVRP***

modes). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the multi mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

802.1Q in combination with Schmid do not disclose, but Uchida from same fields of endeavor teaches: a tri-mode system that changes based on the received signal (Paragraph 10: ***need for an apparatus and method to account for the addition of the GSM mode, so that the tri-mode (AMPS, CDMA, and GSM) wireless telephone can effectively attempt to acquire service in a particular geographic region***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the initiate the switching method as described by Uchida in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

8. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over 802.1Q, 801.1D, Schmid, Huang, Churchyard, and Rodeheffer as applied to claim 10 above, and further in view of Liu.

For claim 11, 802.1Q, Schmid, Churchyard, Rodeheffer, and 801.1D disclose the subject matter in claim 10 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but Liu from same fields of endeavor teaches: a received GVRP message containing a negotiation message with a source identifier that does not match the content of the port partner variable (Paragraph 38: ***a signal received that is not compatible with the current mode of reception will initiate an***

automatic switch to the other mode), the compact GVRP application enters the slow compact mode (Paragraph 38: ***the mode switch to reads on going to the slow mode which can be interpreted as the mode to handle standard GVRP messages***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the dual mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

For claim 12, 802.1Q, Schmid, 802.1D, and Churchyard disclose the subject matter in claim 10 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but Liu from same fields of endeavor teaches: processing a received GVRP message containing a negotiation message with a source identifier that matches the content of the port partner variable (Paragraph 38: ***a signal received that is not compatible with the current mode of reception will initiate an automatic switch to the other mode***), the compact GVRP application enters the fast compact mode (Paragraph 38: ***the mode switch to reads on going to the fast mode which can be interpreted as the mode to handle compact GVRP messages***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the dual mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over 802.1Q, Schmid, Huang, and 801.1D as applied to claim 1 above, and further in view of Davis et

al. (US 2003/0043806) (hereinafter Davis) and Gharachorloo et al. (US 2002/0087806) (hereinafter Gharachorloo).

For claim 13, 802.1Q, 802.1D, and Schmid disclose the subject matter in claim 1 as described above in the office action.

802.1Q do not disclose, but 802.1D from same fields of endeavor teach: the fields loaded with the encoded values (Section 12.11.1.2: ***Figure 12-6 shows the resulting GARP PDU structure with multiple Attributes***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the GARP structure described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to improve inter-operability by using industry established protocols.

802.1Q, 802.1D, and Schmid do not disclose, but Davis from same fields of endeavor teaches: generate a mixed format PDU message (Paragraph 35, Lines 1-6: ***multiple IP packets are placed in the same PDU and the recipient is able to distinguish the different packets***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the multi segment PDU as described by Davis in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

802.1Q in combination with Schmid do not disclose, but Gharachorloo from same fields of endeavor teaches: a vector message (Paragraph 195, Lines 15-19: ***a data directory structure using a coarse vector format***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the vector pointer structure as described by Gharachorloo in the GARP VLAN registration

described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

10. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over 802.1Q, 801.1D, Huang, and Schmid as applied to claim 14 above, and further in view of Churchyard and Rodeheffer.

For claim 16, 802.1Q, 802.1D, and Schmid disclose the subject matter in claim 14 as described above in the office action.

802.1Q do not disclose, but 802.1D from same fields of endeavor teach: a leave timer (Section 12.7.4: ***each registrar per attribute comprises a leave timer***); state machines associated with each GID (Section 12.3.2: ***each instance of GID consists of a set of state machines for each attribute value associated with the GARP***); state machine starts the leave timer (Section 12.7.4: ***the registrar starts the leave timer***) while the leave all timer is restarted (Section 12.7.6: ***when the another participant receives a leave all message the participant generates a restart timer message***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

802.1D does not disclose the additional message "just kidding" which causes non-compliant nodes to ignore the compact GVRP message disclosed in claim 1, but Churchyard does disclose using an additional field that non-compliant nodes would ignore which reads on a "just kidding" message. Thus it would have been obvious to

the person of ordinary skill in the art at the time of the invention to implement state machines and timers as described by 802.1D as applied to the additional “just kidding" message described by Churchyard. The motivation is to use the 802.1D standard to any variable or state machines added to the existing protocol.

802.1D does not disclose the additional message “just kidding” which causes non-compliant nodes to ignore the compact GVRP message disclosed in claim 1, but Churchyard does disclose using an additional field that non-compliant nodes would ignore which reads on a “just kidding” message. Rodeheffer from similar fields of endeavor teaches: initiating a plurality of timers where the one time is started to confirm the response from other devices (Paragraph 121, Lines 1-8: ***This timer is started in step 624 when the entry associated with a slave is added to the inventory. The timer is restarted (refreshed) in step 626 each time the slave confirms its acceptance. If a slave fails to confirm its acceptance, eventually the slave's entry timer expires. When an entry timer expires, step 630, the entry associated with the slave is removed from the inventory***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the watchdog timer after sending of the just kidding message for determining node acceptance. The motivation is to prevent the sending node from locking up due non-responsive nodes.

For claim 17, 802.1Q, Schmid, 802.1D, and Churchyard disclose the subject matter in claim 16 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but 802.1D from same fields of endeavor teach: a leave_all timer; and a leave_all state machine, wherein upon expiration of the leave_all timer the leave_all state machine enters an active state

(Section 12.7.6: ***leave all messages are generated by the leave all state machine***) and the compact-GVRP application component generates and sends a GVRP PDU message that is configured to cause network entities that receive it to respond with one or more GVRP PDU messages (Section 12.7.6: ***when the leave all timer expires, a leave all message is generated; this requires all applicants to respond with a rejoin***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

11. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over 802.1Q, Schmid, Huang, and 801.1D as applied to claim 19 above, and further in view of Liu.

For claim 20, 802.1Q, Schmid, and 801.1D disclose the subject matter in claim 19 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but Liu from same fields of endeavor teaches: a received GVRP message containing a negotiation message with a source identifier that does not match the content of the port partner variable (Paragraph 38: ***a signal received that is not compatible with the current mode of reception will initiate an automatic switch to the other mode***), the compact GVRP application enters the slow compact mode (Paragraph 38: ***the mode switch to reads on going to the slow mode which can be interpreted as the mode to handle standard GVRP messages***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the

dual mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

For claim 21, 802.1Q, Schmid, and 801.1D disclose the subject matter in claim 19 as described above in the office action.

802.1Q in combination with Schmid do not disclose, but Liu from same fields of endeavor teaches: processing a received GVRP message containing a negotiation message with a source identifier that matches the content of the port partner variable (Paragraph 38: ***a signal received that is not compatible with the current mode of reception will initiate an automatic switch to the other mode***), the compact GVRP application enters the fast compact mode (Paragraph 38: ***the mode switch to reads on going to the fast mode which can be interpreted as the mode to handle compact GVRP messages***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the dual mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN BLANTON whose telephone number is (571)270-3933. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. B./
Examiner, Art Unit 2466

/Daniel J. Ryman/
Supervisory Patent Examiner, Art Unit 2466